UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XD156NM

Site Name: Gravelly

Precipitation or Climate Zone: 13 to 18 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on upland plains, fans, mesas, and drainageways. Slopes range from 0 to 6 percent. Direction of slope varies but is not significant. Elevations range from 4,000 to 7,000 feet above sea level.

Land Form:

1. Plain
2. Fan
3. Drainageway

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	4,000	7,000
Slope (percent)	0	6
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of this area is "semi-arid continental."

The annual average precipitation ranges from 13 to 18 inches. Variations of 5 inches, more or less, are not uncommon. Approximately 70 percent of this occurs from May through October. Most of the summer precipitation comes in the form of high-intensity, short-duration thunderstorms. Winter moisture is usually negligible.

Distinct seasonal changes and large annual diurnal temperature changes characterize temperatures. The average annual temperature ranges from 55 to 60 degrees F. Extremes of 20 degrees F below zero in the winter to 110 degrees F in the summer is not uncommon.

The average frost-free season is 180 to 200 days. The last killing frost is in early April and the first killing frost is in mid October.

Both temperature and moisture favor warm-season plant growth. Due to gravel in the soil profile, the water intake is fast and penetration is deep. Because the soil has a low water-holding capacity, plants of this site must be able to take advantage of rain when it falls. Strong winds from the west and southwest blow from February through June. This accelerates soil drying within the root zone and further discourages cool-season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	160	191
Freeze-free period (days):	180	221
Mean annual precipitation (inches):	13	18

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.47	.56	21.4	56.6
February	.50	.54	23.8	62.1
March	.49	.57	28.5	68.5
April	.54	.60	35.0	76.7
May	1.13	1.44	43.2	83.5
June	1.78	1.84	51.6	92.2
July	1.87	2.98	55.7	92.1
August	2.29	3.26	54.2	90.3
September	2.67	2.80	48.2	84.3
October	1.24	1.40	37.6	76.7
November	.53	.55	27.5	65.5
December	.60	.68	21.6	57.8

Climate Stations:

				Period		
Station ID	292865	Location	Elk 2E	From: 6/1/1895	To:	12/31/00
Station ID	294112	Location	Hope	From: 03/01/19	To:	12/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils of this site are deep to moderately deep and well drained. Surface textures are gravelly loams and gravelly fine sandy loams. Permeability is moderate to moderately rapid and water-holding capacity is low. Because the soils are well drained and have a low water-holding capacity, this site has a droughty appearance. Plant roots can be deep on shrub species.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Gravelly loam
2. Gravelly fine sandy loam
3.

Surface Texture Modifier:

1. Gravel
2.
3.

Subsurface Texture Group: loamy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): >60
Subsurface Fragments >=3" (%Volume): 35 to 60

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Moderately slow	Moderately rapid
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	Unknown	Unknown
Sodium Absorption Ratio:	Unknown	Unknown
Soil Reaction (1:1 Water):	Unknown	Unknown
Soil Reaction (0.1M CaCl2):	Unknown	Unknown
Available Water Capacity (inches):	3	6
Calcium Carbonate Equivalent (percent):	Unknown	Unknown

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site has a grassland, bare ground, and shrub aspect and is dominated by drought resistant perennial warm-season mid and short-grasses. Shrubs and half-shrubs are scattered and evenly distributed. Forb production varies greatly from season to season and year to year, but can be significant. Total production also fluctuates widely, with elevation.

Canopy Cover:	
Trees	6 %
Shrubs and half shrubs	6 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	28
Bare ground	37
Surface cobble and stone	15
Litter (percent)	8
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	189	410	630
Forb	30	65	100
Tree/Shrub/Vine	60	130	200
Lichen			
Moss			
Microbiotic Crusts			
Total	300	650	1,000

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black Grama	130 – 228	130 – 228
2	BOCU	Sideoats Grama	98 – 163	98 – 163
3	TRIDE	Tridens spp.	65 – 130	65 – 130
4	BOGR2	Blue Grama	33 – 65	33 – 65
5	SPCR SPFL2 SPCO4	Sand Dropseed Mesa Dropseed Spike Dropseed	65 – 130	65 – 130
6	HENE5	New Mexico Feathergrass	13 – 33	13 – 33
7	ARIST	Threeawn spp.	33 – 65	33 – 65
8	MUTO2 SCBR2	Ring Muhly Burrograss	33 – 65	33 – 65
9	2GRAM	Other Grasses	7 – 33	7 - 33

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	DYPA	Fetid Marigold	20 – 33	20 – 33
11	PLPA2	Wooly Indianwheat	20 – 33	20 –33
12	CRTE4	Texas Croton	20 – 33	20 – 33
13	THAC ERIOG	Prickleaf Dogweed Wildbuckwheat	13 – 26	13 – 26
14	2FORBS	Other Forbs	20 – 33	20 - 33

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	ACGR	Catclaw Mimosa	33 – 65	33 – 65
16	YUCCA	Yucca spp.	20 – 33	20 – 33
17	GUSA2	Broom Snakeweed	7 – 20	7 – 20
18	FAPA	Apacheplume	7 – 20	7 – 20
19	ATCA2	Fourwing Saltbush	7 – 20	7 – 20
20	KRLA2	Winterfat	7 – 20	7 – 20
21	2SD	Other Shrubs	13 – 33	13 - 33

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: hairy grama, Hall's panicum, bottlebrush squirreltail, plains lovegrass, plains bristlegrass, little bluestem, tobosa, wolftail, and curlyleaf muhly.
Other shrubs include: cactus spp., mariola, century plant, lechuguila, yerba-de-pasmo, algerita, creosotebush, mountainmahogany, ephedra spp., ocotillo, sotol, sumac spp., althorn, javelina bush, and sacahuista.
Other forbs include: desert holly, verbena, fleabane, senna spp., bladderpod, yarrow, globemallow spp., penstemon, wooly paperflower, and euphorbia spp.

Plant Growth Curves

Growth Curve ID **4606NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Perennial warm-season mid/short grassland with shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat for a resident animal community characterized by desert cottontail, spotted ground squirrel, Merriam's kangaroo rat, cactus mouse, white throated woodrat, coyote, Swainson's hawk, roadrunner, cactus wren, morning dove, scaled quail, leopard lizard, prairie rattlesnake, spadefoot toad, and marbled whiptail. Where associated with other sites, such as limestone hills, mule deer use this site for feeding.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Pena	B
Tencee	D

Recreational Uses:

This site offers some recreation potential for horseback riding, hiking, rock hunting, nature photography, and bird hunting. Trapping for fur-bearing animals is good. During years of high moisture, a colorful display of wildflowers is present.

Wood Products:

This site has no value for wood products.

Other Products:

Grazing:

This site is well suited for grazing by all kinds and classes of livestock, during all seasons of the year. Predator control is needed during calving season and if grazing sheep or goats. This site responds well to a system of grazing which rotates the season of use. Livestock management must by flexible to take advantage of extra production or to keep from harming desirable plant species during dry years. Under retrogression, there will be a decrease in black and sideoats grama, New Mexico feathergrass, fourwing saltbush, and winterfat. A corresponding increase I ring muhly, burrograss, threeawns, broom snakeweed and dropseeds will occur along with an increase in bare ground. In this condition, the water erosion hazard would increase.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	**Ac/AUM**
100 - 76	3.5 – 4.5
75 – 51	4.0 – 5.5
50 – 26	5.0 – 9.0
25 – 0	9.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: **Livestock**
Animal Type: **Cattle**

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	D	D	D	D	D	D	P
Winterfat	Krascheninnikovia lanata	EP	D	D	P	P	P	P	P	P	D	D	D	D

Animal Kind: **Livestock**
Animal Type: **Sheep**

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing Saltbush	Atriplex canescens	EP	D	D	P	P	P	P	P	P	D	D	D	D
Winterfat	Krascheninnikovia lanata	EP	P	P	P	P	P	P	P	P	P	P	P	P
Croton spp.	Croton spp.	EP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Wildbuckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: **Livestock**
Animal Type: **Goats**

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Fourwing Saltbush	Atriplex canescens	EP	P	P	D	D	D	D	D	D	D	D	D	P
Winterfat	Krascheninnikovia lanata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P

Animal Kind: **Wildlife**

Animal Type: **Quail**

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	F/S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sideoats Grama	Bouteloua curtipendula	F/S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Croton spp.	Croton spp.	F/S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Catclaw Mimosa	Mimosa aculeaticarpa	F/S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Chavez, Eddy, Lincoln, Otero**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Otero, Eddy, Chaves, Lincoln

Characteristic Soils Are:	
Pena	Tencee
Other Soils included are:	

Site Description Approval:

Author	**Date**	**Approval**	**Date**
Don Sylvester	02/02/82	Donald H. Fulton	03/03/82

Site Description Revision:

Author	**Date**	**Approval**	**Date**
Elizabeth Wright	07/12/02	George Chavez	12/17/02